GLOBALIZATION AND WATER RESOURCES MANAGEMENT:
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CONFLICTS BETWEEN SECTORAL AND TRANSBOUNDARY FRESHWATER USES: CAUSES, PREVENTION AND DISPUTE SETTLEMENT

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ABSTRACT: In numerous parts of the world competition between different sectoral freshwater uses can lead to tensions, both at the national level and in the transboundary context. Conflicts can arise over scarce water resources, pollution, and accidents. The causes of conflicts, often based on inefficient practices and inadequate policies on multi-sectoral water uses, can be dangerously enhanced through lack of communication between national and international stakeholders. The water-related tensions in Central Asia serve as example. Some approaches at the Pan-European level to establish legal, institutional and developmental frameworks for conflict prevention and dispute settlement are described.

KEY TERMS: linking agriculture, energy and other water uses; EIA and SEA; transboundary waters and accidents; legal and institutional frameworks for conflict prevention and dispute settlement.

INTRODUCTION: COMPETITION OF SECTORAL INTERESTS

The UN Conference on Environment and Development (UN 1992) adopted the principles of sustainable development at the highest political level. In the same spirit, the Ministerial Declaration of The Hague on Water Security in the 21st Century (World Water Forum 2000) reiterated that actions should be based on integrated water resource management. This takes account of social, economic and environmental factors and integrates surface water, groundwater and the ecosystems through which they flow. It recognizes the importance of water quality issues.

Sustainable, integrated water resources management requires that problems are not shifted to future generations, from one sector to another, and from one state/jurisdiction to another. Uncoordinated, non-sustainable sectoral policies have led to massive damage of water quality as well as to over-use of water resources in many parts of Europe, and especially in the countries in transition (CIT), comprising the countries of Central and Eastern Europe (CEE), and the Newly Independent States (NIS) that emerged from the former USSR. The main economic sectors and source activities responsible for unsustainable water management are agriculture, industry, energy, and in some places tourism, to which must be added inadequacies and deficiencies of municipal and general infrastructure, e.g. water supply, waste water treatment and solid waste management (Bosnjakovic, 2001). Within the UN Economic Commission for Europe (ECE) region, drinking water supply is inadequate for nearly 100 million people, and eruptions of water-borne bacterial diseases are not uncommon in the NIS.

In order to overcome non-sustainable sectoral policies, there is a need for coherent national and, where appropriate, regional and international policies to overcome fragmentation, and for transparent and accountable institutions at all levels. In particular, sustainable integrated water resource management depends on collaboration and partnership at all levels, from individual citizens to international organisations.

As an example, some scientists have argued that sustainable water use in water short economies requires a long-term solution by making use of a global trading system known as “virtual water”. It is the water embedded in

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key water-intensive commodities such as wheat. According to that view, the international wheat trade is a very effective and highly subsidised global trading system, which operates to the advantage of water and food deficit countries (Allan, 1997). The difficulty however is how to define a policy that optimises not only a narrowly defined economic efficiency within a sector, but also the external costs. These externalities should include the costs of protecting the environment, avoiding social hardships and discrimination of citizens, and taking into account other country-specific circumstances like the security requirements.

In an open society this balance can only be reached through participatory and comprehensive approaches to decision-making, such as Environmental Impact Assessment (EIA) and, more recently, Strategic Environmental Assessment (SEA). These instruments were in the first place designed for implementation at the national level. However, complications arise when conflicting sectoral interests lead to transboundary spill-over. Issues relating to water resources management in the Central Asia region may serve as a point in case.

TRANSBOUNDARY CONSEQUENCES OF INTERSECTORIAL TRADE-OFF: EXAMPLE OF CENTRAL ASIA

The Aral Sea Basin covers an area of 2.2 million km2, and is home to 40 million people. The two main rivers, Syr Darya and Amu Darya, both 2500 km long have an average total flow of 120 km3/year. Six principal riparian states share the water: Syr Darya (Kyrgyz Republic, Tajikistan, Uzbekistan and Kazakhstan); and Amu Darya (Afghanistan, Tajikistan, Uzbekistan and Turkmenistan). Due to arid conditions, irrigation and drainage are vital. The major part of the population inhabits the irrigated area, which covers 8 million ha. Over 90% of diverted river water is used for irrigation.

The rapid expansion of irrigated agriculture between 1950 and 1980 caused the following main problems (Lennaerts, in OSCE 2000):

- Dramatic drying up of the Aral Sea;
- River and soil salinization;
- Basin water management (water allocation, river management, in the 1990s followed by accelerated deterioration of water infrastructure and its management).

Issues in Sharing Water Resources

The former Soviet republics in the Central Asian region became independent in the early nineties. In Soviet times there was one system of distribution of water to the different regions, and other distribution systems for energy, food, etc. After independence, the Central Asian Heads of State decided that the water distribution and allocation system between the countries would remain in force. They did not make such agreements regarding other resources such as oil and gas. Not surprisingly, friction arose over these resources due to diverging sectoral and national interests and limitations (Dukhovny, in OSCE 2000; Bosnjakovic, 2000).

One of the most acute disagreements over resource sharing concerns the “energy-agriculture” trade-off between upstream countries (Kyrgyzstan and Tajikistan) and downstream countries (Kazakhstan, Uzbekistan and Turkmenistan). The waters of the Amu Darya and Syr Darya rivers can be managed to maximise either hydroelectric generation from the dams of the upper watersheds with peak seasonal demand for water release in the winter months, or for irrigation with peak seasonal demand in the summer months. The water allocation arrangement stemming from the Soviet period has not successfully met the water needs of either the upstream or downstream republics. While the agricultural regions of the downstream countries have grown dependent on continuous water supplies for crop production, the upstream countries are searching for ways to expand their economies through the use for hydropower and the expansion of their agricultural sector. For example the Kyrgyz Republic now owns the single most important hydropower and irrigation storage facility of the region, the Toktogul dam on the Naryn-Syr Darya Cascade. Since Kyrgzstan has begun shifting its operating regime to a power-generating mode this has led to a controversy with the downstream countries. The downstream countries fear that not enough water will be available for irrigation in the summer period if the water is used for hydropower generation in the winter period. Barter agreements by which the electricity needs of the upstream countries would be satisfied by energy imports from downstream countries, have not been successful so far.

The problem of transboundary resource-sharing is to a large degree generated by inadequate national policies and practices. The excessive use of water is caused by the following main factors:

- dependence of some national economies on the production of water-intensive crops such as cotton and rice

which are a principal source of foreign trade of e.g. Uzbekistan;

- absence of water pricing systems that stimulate more economic water consumption;
- absence or often ruinous state of water measuring facilities;
- dilapidated and inadequate condition of municipal and agricultural water delivery systems.

Similarly, the power sector in some Central Asia states has difficulties in meeting its obligations. The power sector needs to be restructured in order to become transparent and profitable. The main problems e.g. in the power sector of Kyrgyzstan are the following:

- there is a long way to go before full cost recovery level is reached;
- the maintenance level of technical installations is becoming critical;
- about 50 per cent of the produced electricity is never paid for due to high technical and commercial losses and in addition many electricity bills are never paid;
- the power sector's image towards consumers and donors is gradually worsening due to inadequate management, a deteriorating service level, and bad financial performance.

Failing Instruments of Regional Co-operation

The countries of Central Asia are presently exposed to a triangle of forces including the legacies from the Soviet period, various forms of traditionalism stemming from a longer historical past, and the challenge of globalisation. Each of these forces constitutes a challenge both at the national and the inter-state level. The countries of the region have frequently expressed their good intentions to work together, but they have not yet developed a clear, consistent concept for effective co-operation.

The water sector is a striking example of fragmentation, confusion and duplication of transboundary co-operation. In the course of recent years, several regional institutions have been established where each views at least part of the management of the regional water systems in its domain. These institutions include:

- Basin Water-Management Organisations (BVOs) for Syr-Darya and Amu-Darya;
- Interstate Council for Water Co-ordination (ICWC);
- Sustainable Development Commission (SDC);
- International Fund for the Aral Sea (IFAS);
- Interstate Council for Kazakstan, Kyrgyzstan, Tajikistan and Uzbekistan (ICKKTU).

Presently there is no single organisation specifically charged with the long-term development of the river basins as a co-operative effort. The Amu Darya and Syr Darya BVOs have the responsibility for short-term operations, but do not have responsibility for data collection, a national task, or general oversight. The main constraints in developing international management organisations for the Central Asian river basins are:

- the existence of competing organisations formed before and after the disintegration of the Soviet Union, characterised by overlapping responsibilities and weak available resources;
- lack of national and regional policies on multi-sectoral water uses;
- insufficient co-operation between international donor organisations.

Role of International Co-operation and Donor Organisations

A considerable number of donor institutions and countries have been active in Central Asia through various types of programmes. The involvement in the financing of the IFAS programmes was already mentioned. The European Union (EU) has been active in Central Asia for several years, mainly through the Technical Assistance for the Commonwealth of Independent States (TACIS) Programme which has established the so-called Water Resources' Management and Agricultural Production (WARMAP) Programme. Similarly, the USAID has been carrying out the programme on Environmental Policies and Institutions for Central Asia (EPIC). Attempts have been made both through WARMAP and EPIC to establish effective, working agreements on regional water and resource management.

Other countries are also active in Central Asia. For example, Switzerland financed a project for regional co-operation to strengthen national hydro-meteorological services through trans-boundary monitoring. Most of these projects were not done in a mutually co-ordinated way. According to a high politician from Central Asia,

"international programmes have brought to Central Asia not only resources but also new tensions on how to divide these resources."

Together with ESCAP, ECE is responsible for carrying out a Special Programme for the Economies of Central Asia. A major component of it is the project on rational and efficient uses of water and energy, the main aim of which is to develop a regional strategy on this topic. Having recognised the lack of information exchange between international water-related programmes, UNECE convened in September 2000 all water-related donors operating in Central Asia for a consultative meeting in Geneva. The meeting agreed to ensure information exchange by establishing a website, and by organising occasional meetings. The network of organisations could function in analogy with the Mekong River Basin Support Group (ECE, 2000).

The Organisation for Security and Co-operation in Europe (OSCE) acting in the field of its core competence, also tries to play a role in the field of water and resources management by organising seminars and fact-finding missions with the view of improving co-operation and security in Central Asia. During a recent OSCE seminar in Berlin it was recognised that the countries of Central Asia have not made use of existing international legal instruments that can be used to cope with inter-sectoral and trans-boundary issues of natural resources management. The participants recommended that "the OSCE should encourage member States to implement international conventions and instruments that concern general principles and rules to be applied to transboundary resource management." (OSCE, 2000).

LEGAL AND INSTITUTIONAL FRAMEWORKS FOR RECONCILING DIVERGING INTERSECTORAL AND TRANSBOUNDARY INTERESTS

The example of water management issues in Central Asia shows the close relationship between national and trans-boundary policies. Whereas water allocation is at present the most difficult issue in some regions like Central Asia, pollution control is a priority in other parts of the ECE region. The Ministerial Declaration of The Hague (World Water Forum 2000) stressed the need of working together with stakeholders to increase the effectiveness of pollution control strategies based on polluter pays principles and to consider appropriate rules and procedures in the fields of liability and compensation of damage resulting from activities dangerous to water resources. The Ministers declared their intention to work within the bodies established by Inter-Governmental Treaties, to strengthen water-related policies and programmes that enhance water security.

UNECE Regional Environmental Conventions as Tools to Reconcile Diverging Interests

In the UNECE region the 1990s have witnessed nearly a doubling of membership to 55 member states. New borders and political developments have created new potential for trans-boundary water management problems. In response to these challenges, the UNECE member states have agreed upon a number of regional conventions, all of which are relevant for reconciling diverging intersectoral and trans-boundary interests. They include:

- Convention on Long-range Transboundary Air Pollution (Geneva 1979)
- Convention on Environmental Impact Assessment in the Transboundary Context (Espoo 1991)
- Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Helsinki 1992)
- Convention on the Transboundary Effects of Industrial Accidents (Helsinki 1992)
- Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus 1998).

Conflict prevention

UN/ECE Conventions are preventive by design as is stipulated in the formulation of certain general provisions. As example, Article 2, paragraph 1, of the Water Convention states: "The Parties shall take all appropriate measures to prevent, control and reduce any transboundary impact."

A number of corresponding instruments of conflict prevention have been elaborated and included in the Conventions, such as:

- obligation of Parties to co-operate;

- consultation mechanisms;
- transboundary notification;
- exchange of information and technology;
- information and participation of the public;
- bilateral and multilateral co-operation;
- mutual assistance;
- joint assessment and monitoring;
- bilateral and multilateral agreements.

Settlement of disputes in the framework of UN/ECE conventions

The UN/ECE Conventions contain identical provisions for the settlement of disputes. Article 22 of the Convention on the Protection and Use of Transboundary Watercourses and International Lakes stipulates, that "if a dispute arises between two or more Parties about the interpretation or application of this Convention, they shall seek a solution by negotiation or by any other means of dispute settlement acceptable to the parties to the dispute." Paragraph 2 continues, that "a Party may declare ... that, for a dispute not resolved ... it accepts one or both of the following means of dispute settlement as compulsory in relation to any Party accepting the same obligation:

(a) Submission of the dispute to the International Court of Justice;
(b) Arbitration in accordance with the procedure set out in Annex IV."

Comparison of the 1992 Helsinki Convention and the 1997 UN Convention on the Law of the Non-Navigational Uses of International Watercourses

On 21 May 1997, the General Assembly of the United Nations adopted the Convention on the Law of the Non-Navigational Uses of International Watercourses ("the Global UN Convention", not yet in force). The provisions and mechanisms concerning dispute settlement and arbitration are similar in both conventions. If the dispute has not been resolved within 6 months by negotiations according to the provisions of Art. 33 '2, the Global UN Convention allows to submit the dispute, at the request of any of the parties to the dispute, to impartial fact-finding.

Other instruments for the resolution of disputes

The International Court of Justice gave judgement in the case concerning the Gabcikovo-Nagymaros Project, between Hungary and Slovakia. The case has important implications for the law of international watercourses and international environmental law (Sands, 1997).
OSCE has already an instrument for the resolution of disputes. It is the Court of Conciliation and Arbitration of the OSCE in Geneva (Aregger, 2001). Its scope is not limited to inter-state disputes. However, so far no case involving an environmental or water dispute has been submitted to this Court.

Practical co-operation under the Helsinki Convention

Since 1994, significant activities on monitoring and assessment have been carried out under the Water Convention:

- Guidelines on monitoring and assessment of transboundary rivers (1996) and ground waters (2000) have been published;
- Transboundary rivers, lakes and ground waters in Europe have been inventoried and mapped;
- 8 pilot projects demonstrating the implementation of the Guidelines on transboundary rivers have been started with the involvement of 12 riparian countries, all in transition; similar pilot projects are under preparation for transboundary ground waters;
- In March 2000, the Parties decided to establish the International Water Assessment Centre (IWAC), which will be a virtual platform of leading European institutes in the field of water management.

The application of the Helsinki Convention can have very real significance for contributing to conflict prevention, conflict resolution and post-conflict management. At the present time, the most relevant areas in the ECE region are South Eastern Europe, Transcaucasia, and Central Asia. In all three areas, UNECE is contributing to the development of programs that enhance co-operation between conflicting parties. In Central Asia, UNECE is

major partner in the UN Special Programme for the Economies of Central Asia (SPECA). In Transcaucasia, UNECE was instrumental in assisting the development of a proposal for a joint project on the management and the protection of the transboundary Kura River. UNECE has also developed an environmental recovery framework for the Adriatic-Ionian Region, within the framework of the Stability Pact for South East Europe.

Unresolved Issues in Addressing Transboundary Water Disputes

There are still complex and unresolved legal and policy issues associated with transboundary water disputes. In the UNECE region these issues relate to

- Elaboration of policies and practices ensuring equitable and rational use of water and sustainable water management: in an ideal world, one would want to adopt universally valid policies and practices; in an imperfect world, tailor-made negotiated solutions are the best that can be achieved.
- Strategic Environmental Assessment in a Transboundary Context: under the Espoo Convention, and Ad hoc Working Group has started the preparation of a draft Protocol on Strategic Environmental Assessment (ECE, 2001).
- Physical and financial assessment of damage resulting from transboundary impact: assessment of damage is often difficult even between partners with similar political values and economic standards.
- Rules for responsibility and liability for transboundary water pollution that is acceptable region-wide: rules for liability in case of transboundary accidents are among the hottest items on the international environmental agenda.

Following the decisions of the Parties to the Water Convention during their meeting in March 2000 in The Hague, the Working Group on Legal and Administrative Aspects prepared a report on civil liability and water-related accidents, taking into account the outcome of the first meeting of the Conference of the Parties to the Convention on the Transboundary Effects of Industrial Accidents, Brussels, 22-24 November 2000. The Conference of the Parties to the Industrial Accidents Convention recognized, on the basis of the preliminary report and the background study, the shortcomings of existing international civil liability instruments (like the Lugano Convention on Civil Liability for Damage Resulting from Activities Dangerous to the Environment), in particular due to their lack of specificity in certain cases and to the fact that they have not entered into force. The Conference of the Parties stressed the need for an appropriate regime, including a legally binding instrument, in the UN/ECE region on civil liability for damage caused by hazardous activities within the scope of both Conventions. A joint special session of the governing bodies of both Conventions, on 2-3 July 2001 in Geneva, decided to enter into an intergovernmental negotiation process for defining the scope of a regime on civil liability.

CONCLUSIONS

It is still too early to assess fully the implications of the UN/ECE conventions with regard to their role and potential as tools for promoting conflict prevention and settling transboundary environmental issues. The main reason for that is that most of them have been in force for only a short period. Even so, it can be concluded that the process of setting up the conventions and of their implementation has led to strongly enhanced transboundary cooperation in Europe, especially with regard to countries in transition.

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